WHAT IS CLAIMED IS:

1. An integrated circuit formed on a substrate, comprising a porous silicon oxycarbide insulator.

2. The integrated circuit of claim 1, wherein the porous silicon oxycarbide insulator has a surface area of approximately between 200 square meters per gram of the porous silicon oxycarbide and 450 square meters per gram of the porous silicon oxycarbide.

3. The integrated circuit of claim 1, wherein the porous silicon oxycarbide insulator has a surface area of approximately 300 square meters per gram of the porous silicon oxycarbide.

4. The integrated circuit of claim 1, wherein the porous silicon oxycarbide insulator has a relative dielectric constant that is approximately less than or equal to that of silicon dioxide.

5. The integrated circuit of claim 1, wherein the porous silicon oxycarbide insulator has a relative dielectric constant that is approximately less than or equal to 2.0.

6. The integrated circuit of claim 1, wherein the porous silicon oxycarbide insulator has a relative dielectric constant that is approximately equal to 1.6.

7. The integrated circuit of claim 1, wherein the porous silicon oxycarbide insulator includes voids that have an approximate diameter between 20 angstroms and 300 angstroms.

8. The integrated circuit of claim 7, wherein the porous silicon oxycarbide insulator includes voids that have an approximate diameter of 30 angstroms.

9. The integrated circuit of claim 7, wherein the porous silicon oxycarbide insulator includes voids that have an approximate diameter of 200 angstroms.

10. An integrated circuit formed on a substrate, comprising:

a plurality of transistors formed on the substrate;

a plurality of first conductors interconnecting ones of the transistors; and

a silicon oxycarbide insulator insulating portions of the first conductive layer from the transistors.

11. The integrated circuit of claim 10, wherein the silicon oxycarbide insulator is porous.

12. The integrated circuit of claim 10, wherein the first conductor is a metal.

13. The integrated circuit of claim 12, wherein the first conductor includes aluminum.

14. The integrated circuit of claim 10, wherein the silicon oxycarbide insulator has a surface area of approximately between 200 square meters per gram of the silicon oxycarbide and 450 square meters per gram of the silicon oxycarbide.

15. The integrated circuit of claim 14, wherein the silicon oxycarbide insulator has a surface area of approximately 300 square meters per gram of the silicon oxycarbide.

16. The integrated circuit of claim **10**, wherein the silicon oxycarbide insulator has a relative dielectric constant that is approximately less than or equal to that of silicon dioxide.

17. The integrated circuit of claim **10**, wherein the silicon oxycarbide insulator has a relative dielectric constant that is approximately less than or equal to 2.0.

18. The integrated circuit of claim **10**, wherein the silicon oxycarbide insulator includes voids that have an approximate diameter between 20 angstroms and 300 angstroms.

19. The integrated circuit of claim **18**, wherein the silicon oxycarbide insulator includes voids that have an approximate diameter of 30 angstroms.

20. The integrated circuit of claim **18**, wherein the silicon oxycarbide insulator includes voids that have an approximate diameter of 200 angstroms.

21. The integrated circuit of claim **10**, further comprising:

a second conductor; and

wherein the silicon oxycarbide insulator insulates portions of the first conductor from portions of the second conductor.

22. An integrated circuit formed on a substrate, the integrated circuit comprising:

a plurality of interconnected circuit elements formed on the substrate; and

a silicon oxycarbide insulator overlying the circuit elements.

23. The integrated circuit of claim **22**, wherein the silicon oxycarbide insulator is porous.

24. The integrated circuit of claim **22**, wherein the silicon oxycarbide insulator has a surface area of approximately between 200 square meters per gram of the silicon oxycarbide and 450 square meters per gram of the silicon oxycarbide.

25. The integrated circuit of claim **23**, wherein the silicon oxycarbide insulator has a surface area of approximately 300 square meters per gram of the silicon oxycarbide.

26. The integrated circuit of claim **22**, wherein the silicon oxycarbide insulator has a relative dielectric constant that is approximately less than or equal to that of silicon dioxide.

27. The integrated circuit of claim **22**, wherein the silicon oxycarbide insulator has a relative dielectric constant that is approximately less than or equal to 2.0.

28. The integrated circuit of claim **27**, wherein the silicon oxycarbide insulator has a relative dielectric constant that is approximately equal to 1.6.

29. The integrated circuit of claim **22**, wherein the silicon oxycarbide insulator includes voids that have an approximate diameter between 20 angstroms and 300 angstroms.

30. The integrated circuit of claim **29**, wherein the silicon oxycarbide insulator includes voids that have an approximate diameter of 30 angstroms.

31. The integrated circuit of claim **29**, wherein the silicon oxycarbide insulator includes voids that have an approximate diameter of 200 angstroms.

32. A memory device, comprising an integrated circuit including a porous silicon oxycarbide insulator.

33. A computer system, comprising an integrated circuit including a porous silicon oxycarbide insulator.

34. A method of fabricating an integrated circuit, the method comprising the steps of:

coating at least a portion of a surface of a substrate with a mixture of oxide and carbon sources; and

transforming the mixture of oxide and carbon sources into an insulator on the integrated circuit.

35. The method of claim 34, wherein the step of coating includes the step of coating with a mixture of oxide and carbon sources includes polymeric precursors.

36. The method of claim 34, wherein the step of coating includes the step of coating with a mixture of oxide and carbon sources that includes an alkoxysilane.

37. The method of claim 36, wherein the step of coating includes the step of coating with a mixture of oxide and carbon sources that includes substituted alkoxysilanes in which at least one alkoxy group is replaced by an "R" group selected from the group consisting essentially of CH_3, C_2H_5, and C_6H_5.

38. The method of claim 34, wherein the step of coating includes the step of coating with a mixture of oxide and carbon sources that includes a silicon alkoxide.

39. The method of claim 34, wherein the step of coating includes the step of coating with a mixture of oxide and carbon sources that includes methyldimethoxysilane (MDMS).

40. The method of claim 34, wherein the step of coating includes the step of coating with a mixture of oxide and carbon sources that includes tetraethoxysilane (TEOS).

41. The method of claim 34, further comprising the step of forming the mixture of oxide and carbon sources by:

mixing approximately 50% methyldimethoxysilane (MDMS) and approximately 50% tetraethoxysilane (TEOS); and

hydrolyzing the mixture of MDMS and TEOS in the presence of an acid.

42. The method of claim 41, wherein the step of mixing the MDMS and TEOS includes the step of mixing the MDMS and TEOS in ethanol for approximately 6 hours.

43. The method of claim 41, wherein the step of hydrolyzing the mixture of MDMS and TEOS includes the step of mixing water and hydrochloric acid with the MDMS, TEOS, and ethanol.

44. The method of claim 34, wherein the step of transforming includes the steps of heating and drying the mixture of oxide and carbon sources.

45. The method of claim 34, wherein the step of transforming includes the step of pyrolyzing the mixture of oxide and carbon sources.

46. The method of claim **45**, wherein the step of pyrolyzing the mixture of oxide and carbon sources is performed in an argon atmosphere.

47. The method of claim **45**, wherein the step of pyrolyzing the mixture of oxide and carbon sources comprises the step of heating, at approximately between 450 degrees Celsius and 1200 degrees Celsius from approximately between 0.5 hours and 24 hours, the mixture of oxide and carbon sources and the semiconductor substrate.

48. The method of claim **34**, further comprising the step of removing an excess portion of the insulator by chemical mechanical polishing (CMP) to obtain a desired thickness of the insulator.

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